

## PATENT ABSTRACTS OF JAPAN

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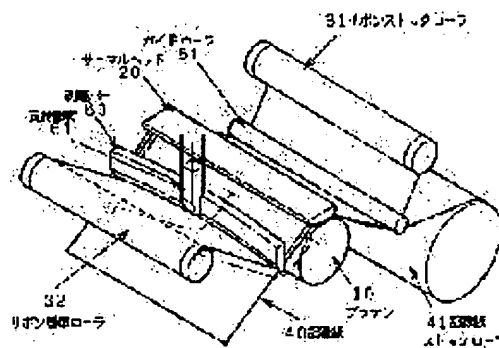
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## (54) INK RIBBON PEELING MECHANISM

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To prevent the generation of wrinkles in an ink ribbon by using an elastically deformable member as a peeling member in an ink ribbon peeling mechanism and making the contact position of the peeling member with the rear surface of the ink ribbon changeable by generating elastic deformation in the peeling member.

**SOLUTION:** An actuator is provided to the support member 61 of a peeling bar 60 and constituted so as to be capable of controlling the elastic deformation quantity of the peeling bar 60 corresponding to a signal. By allowing the central part of the peeling bar 60 to protrude toward a recording part, the force developed from the central part of the ink ribbon sent out of the recording part to both ends thereof is applied to the ink ribbon at the contact part with the peeling bar 60. Therefore, wrinkles are not generated in the ink ribbon. The use of the peeling bar 60 of which the central part is allowed to protrude toward the recording part is especially effective in a case using a resinous ribbon as the ink ribbon. That is, by providing an elastically deformable peeling member, the effect altering the shape of the peeling member is obtained.



## LEGAL STATUS

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**CLAIMS**

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[Claim(s)]

[Claim 1] Where an ink ribbon is piled up with a record medium, after recording, In an ink ribbon exfoliation device in which transport in the direction which tears off this ink ribbon from the above-mentioned record medium through an exfoliation member which contacts the back of the above-mentioned ink ribbon while being width of face of this ink ribbon, and width of face mostly in agreement, and the above-mentioned ink ribbon is exfoliated from a record medium An ink ribbon exfoliation device which uses a member in which elastic deformation is possible as an exfoliation member, and is characterized by having made this exfoliation member start a contact location on the above-mentioned back of an ink ribbon of this exfoliation member, and making elastic deformation adjustable for it at it.

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## DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to an improvement of the exfoliation device of an ink ribbon about the recording device which used an ink ribbon like thermal-transfer-recording equipment.

[0002]

[Description of the Prior Art] The general configuration of the typical thermal-transfer-recording equipment which uses an ink ribbon is shown in drawing 4. The Records Department is formed by the platen 10 and the thermal head 20, and the recording paper 40 from the recording paper stock roller 41 is introduced into this Records Department through a guide idler 51 in the condition of having piled up with the ink spreading side of the ink ribbon 30 from the ribbon stock roller 31.

[0003] And the predetermined part of the back of an ink ribbon 30 is heated by the thermal head, melting of the ink of the part concerned is carried out, for example, the recording paper imprints, and record is performed. Subsequently, the completion portion of record is transported to the location of the exfoliation bar 60. The location of this exfoliation bar 60 serves as a changing point of the migration direction of an ink ribbon 30 in order to tear off a used ink ribbon from the recording paper 40. An ink ribbon 30 is rolled round by the ribbon winding roller 32, and the recording paper [ finishing / record ] 40 is sent out of equipment.

[0004]

[Problem(s) to be Solved by the Invention] Conventionally [ above ], in equipment, in order to exfoliate an ink ribbon efficiently, various proposals have accomplished. For example, as shown in drawing 4, what made thick the thing which made the center section thin about the exfoliation bar 60, or the center section is put in practical use. Although these were advantageous in specific conditions respectively, this configuration of \*\*\*\*\*-60 needed to be changed depending on the class of ink ribbon. This invention is accomplished in order to improve this point.

[0005]

[Means for Solving the Problem] For this reason, where an ink ribbon is piled up with a record medium, after recording by this invention, In an ink ribbon exfoliation device in which transport in the direction which tears off this ink ribbon from the above-mentioned record medium through an exfoliation member which contacts the back of the above-mentioned ink ribbon while being width of face of this ink ribbon, and width of face mostly in agreement, and the above-mentioned ink ribbon is exfoliated from a record medium A member in which elastic deformation is possible as an exfoliation member was used, this exfoliation member was made to cause elastic deformation, and a contact location on the above-mentioned back of an ink ribbon of this exfoliation member was made adjustable.

[0006]

[Function] By preparing the exfoliation member in which elastic deformation is possible, an effect equivalent to having changed the configuration of an exfoliation member can be acquired. Therefore, modification according to the class of ink ribbon of an exfoliation bar becomes unnecessary.

[0007]

[Example] Hereafter, this invention is explained with reference to the example equipment of a drawing. The usual state diagram of the exfoliation bar 60 and drawing 3 of explanatory drawing and drawing 2 which show

the condition that drawing 1 - drawing 3 are concerned with the example of this invention, respectively, and drawing 1 carried out elastic deformation of the exfoliation bar 60 are control circuit drawings of the elastic deformation of the exfoliation bar 60.

[0008] Drawing 1 is the state diagram (it was made to bend) which carried out elastic deformation of the exfoliation bar 60 to the Records Department side at the convex. The actuator which is not illustrated is formed in the supporter material 61 of the exfoliation bar 60, and controlling the elastic deformation (the amount of deflections) of the exfoliation bar 60 according to a signal is constituted possible.

[0009] Thus, the force spread towards ends from a center near the contact section with the exfoliation bar 60 is given to the ink ribbon 30 sent out from the Records Department by making the center section of the exfoliation bar 60 into the Records Department side at a convex. Therefore, generating of a wrinkling is prevented by the ink ribbon 30. In addition, in this way, it is effective to make the center section of the exfoliation bar 60 into the Records Department side at a convex, especially when a resin system ribbon is used as an ink ribbon.

[0010] Drawing 2 makes the exfoliation bar 60 a normal state. The contact section to the recording paper 40 of exfoliation bar 60 throat is also in the same location to the recording paper migration direction. This is the field joint-right effect which used the wax system ribbon as an ink ribbon.

[0011] Drawing 3 shows the control unit of the elastic deformation (the amount of deflections) of the exfoliation bar 60. A ribbon class signal is inputted into a control circuit 70 from the ribbon sensor 71. In a control circuit 70, the amount of deflections of the optimal exfoliation bar 60 for the ink ribbon concerned is read from the amount table 72 of deflections based on the signal from this ribbon sensor 71. And the actuator 74 in which the exfoliation bar 60 is sagged through the actuation circuit 73 is driven.

[0012] Corresponding to each of two or more kinds of ink ribbons, with this example equipment, the linear motor is used as an actuator 74 so that it can carry out adjustable [ of the amount of deflections of the exfoliation bar 60 ]. Moreover, in this case, when what is necessary is to correspond only to two kinds, a wax system ribbon and a resin system ribbon, a solenoid can be used as an actuator 74.

[0013]

[Effect of the Invention] As mentioned above, according to this invention, according to the class of ink ribbon etc., proper elastic deformation (deflection) can be given to a ribbon exfoliation bar. Therefore, it is not concerned with the class of ink ribbon, generating of the wrinkling of the ink ribbon concerned can be prevented, and efficient ribbon exfoliation is attained.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] Drawing 1 is the state diagram which carried out specified quantity elastic deformation of the exfoliation bar of the ribbon exfoliation device in connection with this invention.

[Drawing 2] Drawing 2 is normal-state drawing of the exfoliation bar of the ribbon exfoliation device in connection with this invention.

[Drawing 3] Drawing 3 is circuitry drawing showing the control unit of the elastic deformation of an exfoliation bar.

[Drawing 4] Drawing 4 is with the configuration perspective diagram of conventional thermal-transfer-recording equipment.

[Description of Notations]

10: Platen 20: Thermal head

60: Exfoliation bar 61: Supporter material

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【発明の効果】以上、この発明によれば、インクリボンの種類等に応じて、リボン剥離バーに対して適正な弾性変形（たわみ）を付与することができる。したがって、インクリボンの種類に関わらず当該インクリボンのしわの発生を防止でき、また効率のよいリボン剥離が可能となる。

【図面の簡単な説明】

【図1】図1は、本発明に関わるリボン剥離機構の剥離バーを所定量弾性変形した状態図である。

\*【図2】図2は、本発明に関わるリボン剥離機構の剥離バーの通常状態図である。

【図3】図3は、剥離バーの弾性変形量の制御装置を示す回路構成図である。

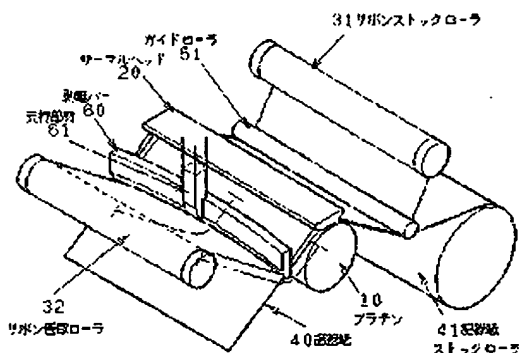
【図4】図4は、従来の熱転写記録装置の構成斜視図である。

【符号の説明】

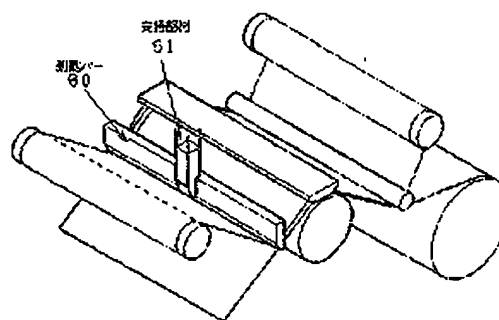
10：プラテン 20：サーマルヘッド

60：剥離バー 61：支持部材

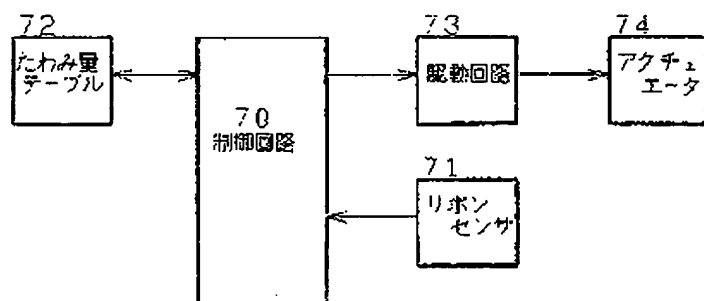
【図1】



【図2】



【図3】



【図4】

